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ABSTRACT

There is a widespread perception that urban public school education has failed: a perception that has attracted the concerned attention of businessmen and government officials. The crux of the problem is our nation's failure to do enough for children early enough to make a lasting difference in their lives. Too little too late seems to be the golden rule of American education. Child development specialists and findings of developmental research on the effectiveness of very early interventions indicate that when early interventions are made, their outcomes are impressive in terms of academic and social gains. But realism dictates that attempts to radically improve children's health, education, and overall well-being must start very early, as early as the prenatal period. Such attempts are difficult and costly to implement. They require many trained people. To be successful, intervention attempts need to involve parents who do an inadequate job of nurturing and stimulating their children in the critical years before schooling begins. It would help if universal Head Start were implemented immediately, and if a way could be found to guarantee the health, early stimulation, and nurturing of children born at high risk, as Chicago's Robert Taylor Homes' Beethoven Project attempts to do. (RH)

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EDUCATION - DOES IT MAKE ANY DIFFERENCE WHEN YOU START?

December 15, 1989 - Address to the Forum of the City Club of Cleveland delivered by Irving B. Harris, Chairman of the Ounce of Prevention Fund.

There is a widespread perception that public school education in our big cities has failed. Businessmen have come to recognize, particularly in the last eight years and with the leadership of the Committee for Economic Development, that this failure of public education threatens the very survival of American business against increasing worldwide competition. In the past two years, Fortune magazine has sponsored two Education Summits, to bring together the best thinkers they could find to discuss the problem and suggest possible solutions.

Governors of our various states have also become very interested because when they try to induce companies to locate new plants in their state, they hear from the executives of those companies, whether they are Japanese or American, that business is only secondarily interested in low taxes. Mainly they are interested in the quality of available personnel. If they are going to build a plant that will last 40 years, they want to know where the labor supply is coming from and whether well-educated human resources will be there when they need them.

Some governors, like Governor Kean of New Jersey and Governor Clinton of Arkansas, see the education problem as threatening the very survival of our nation if we are to remain a broad based democracy. Governor Kean quotes Thomas Jefferson, "If a nation expects to be ignorant and free in a state of civilization, it expects what never was, and never will be." Governor Clinton recently pointed out that for 40 years we have waved the banner of democracy in the world and now, just as Communism is faltering all over Europe, ironically our own democracy is in great danger because of the imminent breakdown in our society. He observes a growing underclass, poorly educated with an increasing gap between high income and low income workers.

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Brad Butler, former CEO of Proctor & Gamble, asks whether we are aware that we are about to pass on to our children living conditions such as exist in Mexico City or Manila, where in order to be safe you have to erect high walls around your home and top them off with broken glass or barbed wire. Then, with the help of armed guards you can almost feel safe. This may seem a little dramatic, but whether you are concerned about the quality of job applicants, about democratic government or about personal safety, all of us should be interested in the question of American education.

Let me quote a few statistics. George Bernard Shaw said, "The mark of a truly educated man is to be moved deeply by statistics." Last June, our high schools graduated 700,000 students who could not read their diplomas. 700,000 more dropped out before high school graduation, for a total of 1,400,000 who are functionally illiterate. Since 18 years ago only 3,700,000 children were born in the United States, this means

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37% of these 18 year olds, more than one-third of our nation's youth, are functionally illiterate. And with technology advancing all over the world, employers now expect the average new employee who starts with them and stays with their company to experience five job changes over the next 40 years. Whenever the technology changes, each employee will have to learn a new job. This will require costly retraining. But even to start such retraining the employee will have to have an ability to read and comprehend so that the training can take place. No longer is a strong back and a willing heart sufficient to gain employment in a company which has to compete against the technology of Germany, Japan or Korea.

Well, how can we fix our poor educational outcomes. How about the simple, quick fixes. Let's require high school students to work harder. Don't allow students to have driver's licenses if they drop out of high school. Or, follow the state of Wisconsin's lead and withhold welfare payments from any parent whose child has more than two unexcused absences during a semester. Or we can simply spend more money on education.

As we think about it, we realize that we already have a huge and costly educational system in this country which gets into gear when a child enters kindergarten. In 1986, we spent $264 billion on our educational establishment on students age six up through graduate school. This year we'll spend $350 billion. That's an increase of $86 billion in just three years. Does anyone think that those $86 billion have improved education? No one that I know of! Incidentally, the federal programs for Head Start for children 4 years old, which were funded at $1.2 billion in 1986 are still funded at $1.2 billion in 1989. Head Start was launched 23 years ago by President Lyndon Johnson. In 1989, that $1.2 billion is sufficient to pay for only 18% of our nation's eligible 4 year olds.

As a nation, we fail to do enough for our children, early enough, to make a lasting difference in their later lives. Too little too late seems to be the golden rule of American education.

If the problem were that Americans were too short and you wanted to increase our students' height, I doubt that anyone would seriously think that we should spend a lot of money to improve the eating habits of sixteen year olds in order to try to improve their height. Common sense tells you that most of a child's growth has occurred before the age of sixteen. As a matter of fact, it's a little awesome to realize that all of us had attained one-half of our mature height by the time we were 2 1/2 years old. That's right. If you're six feet tall now, you were already 3 feet tall when you were 2 1/2.

Professor Benjamin Bloom of the University of Chicago, an outstanding student of human development, points out that human growth occurs at a decelerating rate. He says if you really want to affect an adult's height, the most effective time to improve his

nutrition and health is from the time of conception until he is 2 1/2. That's when the growth is greatest.

Professor Bloom also pointed out that human intelligence, our capacity to learn, grows at a decelerating rate. His research showed that by the age of four, more than one-half of our intelligence is in place. If you spend any time playing with young children, age three or two or one, or even three months of age, you can tell from your own observation just how smart those kids are and how much they have learned in the few months that they have been alive.

T. Berry Brazelton, a respected pediatrician at Harvard, says he can tell by examining a nine month old infant whether that infant is likely to make it in school or fail in school, simply by observing how that child approaches very simple tasks, like playing with blocks. Learning patterns develop very, very early and while they can be changed by play therapy, it is not likely that patterns once learned will change much unless therapy occurs.

Recent brain research tells us that three months before we are born we already have in the back of our heads, 10 billion neurons. That's as many as we ever get. And over the next 21 months those neurons are interconnected with synapses so that by the time we are 18 months old our central nervous system is very well developed. How it has developed makes a big difference in how well we learn for the rest of our lives. Again to quote Professor Bloom from his book Stability and Change in Human Characteristics, written 25 years ago, "General intelligence appears to develop as much from conception to age four as it does during the 14 years from age 4 to age 18." He also said, "Thus general intelligence or general academic achievement must be manifestations of fundamental properties of the central nervous system as well as of an underlying pattern of basic habits, attitudes and ways of relating to the world." Motivation is another word to describe "basic habits, attitudes, and ways of relating to the world." Motivation is an enormously important part of learning - and it is learned in infancy.

Getting back to those neurons, they are created at the average rate of 40,000 every minute, 60 minutes an hour, 24 hours a day, for the first 180 days after conception. It's shocking but true to realize that frequently in the very first few weeks of pregnancy, even before a woman knows that she is pregnant, she may have unwittingly damaged the central nervous system of her fetus by smoking cigarettes, drinking alcohol or taking drugs.

Five years ago I picked up the New York Times one day and read an account of an initiative taken by the Superintendent of Schools in Minneapolis, Richard Green, who later went on the become Chancellor of the New York system and then died suddenly a year ago. In order to improve his school system, he did something radical. He

decided he would not allow anyone to go into tenth grade unless that student had satisfactorily completed all his ninth grade work. He wanted to be sure that tenth grade classes would not be slowed down by students who were not capable of learning at the tenth grade level. He set up a matriculation test at the end of ninth grade and did the same thing for seventh grade, fifth grade, second grade and kindergarten. And, much to everyone's surprise, 10% of the kindergarten class flunked, were considered "not ready" for first grade. The New York Times, as well as the parents, were shocked.

When I talked to a friend of mine who taught kindergarten in the Chicago Public School system she said she wasn't surprised by that. As a matter of fact, in Chicago she thought the percentage of kids "not ready" for first grade would have been over 20%. She went on to say that she was an experienced teacher and could handle a class in which one child was "not ready." But she hastened to add, if she had two or three children who were not ready, she would have to shortchange the whole class. By "not ready" she meant a child who had a low span of attention or was hyperactive or had a hearing problem or a vision problem or was prone to violence, or had a learning disability. Just to satisfy myself, I spoke individually to five other teachers. Each used the same terms, said she was well trained and could handle one child who was "not ready" without shortchanging the whole class. But then each quickly added that if she had two or three children in the class who were "not ready," there was no way she could avoid shortchanging the whole class. After further questioning, all of the five inner city teachers told me they realized they were shortchanging the class every day, every week, and every year.

No wonder then, that when the Chicago schools were required by our legislature two years ago to test and compare the scores of graduating high school students to national norms they found that more than half of Chicago's 58 high schools which were tested ended up in the lowest 1 percentile of the A.C.T. universe. A.C.T. annually profiles students in 5,400 schools. 1% of 5,400 is 54. 35 of Chicago's 58 schools which took the test were in the bottom 54. "Shortchanging," as a figure of speech, was not an exaggeration. It was true. Incidentally, I do not believe Cleveland, Detroit, New York or most of our big cities are in the A.C.T. sample.

So, we spend $350 billion a year trying to educate children from the age of six up through university, while for the children at high risk of failure, we're missing the most important time for improving learning capacity, namely from the minute of conception until those children are four years of age.

Well, what about Head Start. Head Start is frequently a very good program, depending, of course, on how well trained the teachers are. Head Start works for many three and four year old children, although it seems to be too late for others. And that shouldn't surprise us. An even more comprehensive preschool program was set up in New Haven under the direction of Dr. Sally Provence at Yale some 20 years ago.

She worked with 17 very poor children from the time the children left the hospital after birth to 30 months of age. She and a skilled team at Yale worked intensively with the children and with the parents and provided a great deal of family support.

Six of the fathers participated; 11 did not. The outcomes were excellent. All but one of the children did well in school. That one had a learning disability. In the follow-up study, not one of the children had been in trouble with the law or presented a behavior problem in school or at home. In addition, after ten years, only two of the participating families were still on welfare, while over half of the control families were still not self-supporting.

The difference in outcomes for the boys in the experimental group compared to a control group were quite significant: their attendance in school was much better, as was their cooperation with their parents and teachers.

Another successful experiment with very early childhood programs was the federally funded Family Development Research Program which operated between 1969 and 1975 in Syracuse. It offered comprehensive services to 80 low income families with children between 6 and 60 months of age. The major goal was, "The support of child and familial behaviors that sustained growth and development after intervention ceases." A population of expectant mothers and mothers of newborns was carefully selected and included only families with first, second or third children. The families in both the research group and control group met the following definition of disadvantage:

1. Family income of $5,000 or less

2. Mother with less than a high school education

3. Mother having no work history, or unskilled or semi-skilled work history.

4. Father, if living at home, with high school education or less. 85% of mothers were single parent heads of household.

In addition, their children must have had a normal birth defined as no cesarian sections, no severe toxemia, no difficult delivery, no birth complications and birthweight of five pounds or more. By age five, children in the experimental program, boys and girls, showed statistically meaningful gains in their cognitive functioning compared to the 80 control children. Neither social nor emotional gains were measured because they were too hard to gauge. After age five, these 80 program children, all of whom were ready for kindergarten, were scattered among numerous public schools close to where they lived and not concentrated in any particular school.

From the longitudinal study undertaken when the Syracuse children were 15 years old, it was apparent to the program director that particularly for program boys, the peer pressure from their classmates had militated against their continuing to do well in school cognitively. The program girls retained their superior records, while the program boys did not. At age 15 the principal measurable difference for the program boys was in their functioning in society. Out of the 65 experimental program children who could be found ten years later, only 4 had been placed under supervision of the probation department, contrasted with 12 of the 54 control children who could be located, 6% versus 22%. This translated to an estimated cost to society for court processing, probation services, supervision and detention of $186 per child in the program group compared to an estimated $1,985 per child in the control group, more than ten times as much.

Not only did the incidence of juvenile delinquency in the control group far exceed that of the program group, but so did the severity of their offenses. The four program children were mainly described as "ungovernable" while the offenses charged to the control group were more serious: burglary; assault, second offense; robbery, second offense; attempted assault, second offense; sexual abuse; criminal mischief; violation of probation; petty larceny. In other words, the difference was not only a ten fold higher cost in dollars to the probation department, but a clear warning of much heavier costs to come from later prison sentences.

One extremely good Head Start type program was carried out in Ypsilanti, Michigan. In that program a careful study of the experimental group who had had two years of a good preschool program coupled with home visiting were compared with a control group who had no preschool and no home visiting. Of the control group, 49% graduated from high school, while 67% of the experimental group finished high school. That's quite a difference, 18%. But when you think about it, it's still discomforting that 33% of the experimental group still did not finish high school and 31% of the experimental group, at age 19, were judged to be functionally incompetent. Again, home environment, shortchanging by the public school system, and probably peer pressure accounted for the failure of 33% of the experimental group.

Programs that attempt to radically improve children's health, education and overall well-being must start very early, as early as the prenatal period. But we must be realists: these programs are difficult and costly to implement. They must be done but done right. They will require many, many trained people. At the present time, there is an enormous shortage of well trained public health nurses, social workers and early childhood development specialists. Part of this shortage results from low salary scales because we do not value early education. We pay teachers in child care and preschool much less than we pay janitors.

We must train more teachers to work with infants and young children. As anyone

knows who is an experienced teacher, teaching a 2 year old or a 3 year old is quite different from teaching an 8 year old. Stated differently, a 3 year old is not just a short 8 year old.

We should also be trying much harder to reduce radically the number of unintended births to poorly educated adolescents if we are to get a handle on the public school education problem in this country.

It's fair to assume that at least 880,000 babies were born this year at very high risk of educational failure. This includes 480,000 births to teenagers and probably an additional 400,000 babies born to women who have no plans and little capability to nurture and appropriately stimulate their children.

Approximately 3,800,000 mothers will give birth to babies in 1989. Almost 3,000,000 will be births where the child is intended and/or wanted - and where the mothers can and will nurture their babies and get them ready for school by age six. But the 880,000 babies born at high risk have little prospect of optimal development. The chances of these children becoming successful participants in our 21st century society is less than 50/50. And our society simply has no capacity to cope with this flood of unnurtured infants.

It's been traditional in America that it is the parents' responsibility to bring up their child so that the child is ready for school at age six. That has been regarded as a civic responsibility. The implicit contract that is made between the school, the teacher, the parent and the child, is that the child is ready for school and wants to learn.

Unfortunately, from the standpoint of the school system, many parents frankly have little capacity to prepare their children for school. Many of these parents are living in poverty, but there are many other parents who are living in poverty who do an excellent job of preparing their children for school. Poverty is obviously a handicap and a terribly stressful condition, but it is by no means the sole problem or even always a problem. Of course, inadequate nurturing can also characterize some high income families. Our society doesn't begin to know how to help children whose parents do an inadequate job of nurturing and stimulating the child in those critical first days and months and years of life, before the children get to school.

Every state has an agency which tries to cope with the most obviously bad cases of child abuse and neglect. None of them do it well. There is no way that we know of to satisfactorily substitute the state's care for the nurturing and love and special interest a parent or close relative brings to the child. In a society where almost all parents do a good job of raising their child, but an occasional child does come into the society who needs a lot of help, we're well enough organized to supply that help and cope with the rare problem child. But the fact is that we're overwhelmed today and don't

begin to have the human resources or facilities, nor does any society have the facilities to handle all of the problem children that are currently being born in the United States. If you look critically at the failure in our educational system, you must conclude that the child's failure and the school's failure are largely determined before the child enters the educational system at age six.

Of course, it's going to help some if we have universal Head Start and we should have it immediately. In a national which can spend $350 billion on education from the age of six up, it's absurd to say that we can't find the $8 billion to put into universal Head Start. We did find the $100 billion for bailing out the savings and loan industry. Our nation would survive without this, but it will not survive without fixing our educational system.

My argument is simple. Until we recognize where the problem is - long before age six, we will continue to see schools fail. The problem is in school readiness - the quality of children entering the system. To be ready for school, the children have to be healthy with appropriate language development, ready for the social experience of school, cooperative with other children, respectful of the teacher and understand the importance of doing well in school.

When you are in manufacturing and are responsible for quality control, it's suicide to wait until the product is manufactured and shipped and in the customer's hands to find out that you have a problem of poor quality. Of course, you have to be sure that everything that you have done to process the parts and raw material is of high quality. But, over and above that, it's essential that you carefully inspect the purchased components at the time they come into your warehouse to make sure that the components you are putting into your product are 100% free of defect.

I realize children are not inanimate components, but the analogy does apply. If a child appears in school age six, apathetic, unable to learn to read with the rest of the class, and/or disruptive, or prone to violence, or suffering from a severe learning disability, the teacher cannot be expected to perform miracles.

If the class has several problem children then, in addition to the classroom teacher, these classes need child development specialists to work with these problem children. Otherwise they will slow down the whole class and learn little themselves.

We should also try to figure out a way to guarantee the health and early stimulation and nurturing of every child born at high risk. We've been trying to do that in the Beethoven Project in the Robert Taylor Homes in Chicago and so far I can only say it's a tough assignment. We are making very slow progress. Programs like Beethoven, and as a result of Senator Kennedy's initiative, there are now 20 such programs across the country, must be regarded only as experimental.

America has become a great country by being practical and by solving problems. We have a lot of work ahead on our education system, but we are bound to fail unless we recognize that we must go way back to the very earliest days of life. That's when education really starts. That's when intelligence and learning ability are shaped.

Children born to teenage mothers are especially vulnerable. Teenage pregnancy continues to be an important and costly problem. In an Illinois study, done by Northwestern University for the Executive Service Corps in 1985, we learned that annually it costs the people of Illinois $853 million to pay for the 23,000 children of teenagers, and that includes only the costs until the child reaches the age of five. Incidentally, the number of births to teenagers in Illinois dropped consistently from 1980 until 1986, but in 1987 and 1988, in both years, there was an increase. In percentage terms, there was an even greater increase in babies born to girls 14 years of age and younger. According to a study by the Alan Guttmacher Institute, in the United States, more than 90 of every 1,000 teenage girls have babies every year. This rate is more than six times the rate of the Netherlands and up to three times the rate of other industrialized countries, including France, England and Sweden. Greater promiscuity is not the reason for these rates. U. S. girls don't engage in sex earlier or more frequently than girls in western Europe. The main difference is our attitude toward sex. The 1 million pregnancies that occur to teenagers in the United States each year are due to many factors: lack of openness about sex, a relatively inequitable distribution of income to the poorest 20% of our population, and restrictions on teenagers' access to information on contraception in school and to low cost contraceptive devices themselves.

Some years ago, most people swept this issue under the rug. Today, with the rate of teen pregnancies again showing an increase, the huge costs to society are attracting more attention. The issue has shifted from backyard whispers to newspaper headlines and legislative debate. Teen pregnancy is no longer a solely private matter. First of all, it is a health problem because pregnant teens, still children themselves, are much less likely to obtain prenatal care, greatly increasing the chance that their babies will be medically endangered and born with inadequate central nervous systems and other birth anomalies. Teen pregnancy also presents a problem for our educational system. Not only do the mothers frequently drop out of school, but their children are more likely to have developmental delays. A substantial number of the public schools' problem children were born to mothers who began their childbearing unexpectedly as unwed teens, unprepared to be mothers.

There are no simple solutions. It is difficult to get high risk pregnant women to obtain prenatal care. If you think about it, prenatal care not only requires the geographic availability of a doctor and financial or insurance coverage, it requires motivation. Doctors cannot inoculate a pregnant woman for prenatal care. Not only must she see

the doctor, but she must also come in regularly and carry out the imperatives of good prenatal care. These include sound nutrition, no smoking, avoidance of alcohol and absolute avoidance of drugs. Drug abuse is, of course, the worst risk for the fetus. While the mother may excrete the forbidden drugs in about one day's time, the baby, growing in the sac of amniotic fluid, with just one maternal usage, will be bathed in the drugs for up to five days. With neurons being created at the rate of 2,400,000 an hour, living in a drug-drenched environment for five straight days can be devastating to the development of the central nervous system and is likely to produce lifelong handicaps. Daily we read the horror stories of cocaine babies - more than 400,000 were born this year alone.

Health and educability are intricately intertwined. Brain damage and developmental delays can create both educational and economic problems for the unborn baby. Educationally retarded youngsters are more likely to drop out of school and end up unemployed or unemployable, consigning themselves and any future children to life in poverty. Perhaps most important is the cost to our public school system. Developmentally delayed or brain damaged children present a momentous challenge. We've known for years that if a child reaches kindergarten one or two years behind his classmates, that child will probably fall three or four years behind in the next half dozen years. Until recently, however, it has not been recognized that the presence of more than one child with learning disabilities or disruptive behavior in a classroom subjects the full class to continuous disruption.

Success in school requires a teacher eager to teach, children prepared to learn and parents who urge their children to work hard and succeed in school. When more than an occasional student is not ready for school, little learning takes place. When more than 5% of the children are not ready for school, the tipping point is probably reached causing the whole school culture to change. Public education by definition means we do not have the luxury of closing the school door to those unprepared youngsters whose unpreparedness is contagious. In Chicago, nearly 20% of our best prepared school children attend special magnet schools or private schools leaving the inner city public schools with somewhere between 10% and 30% of their students "not ready" for school. Public schools have 80% of the population and 100% of the problem kids.

To start to prepare these children for school long before kindergarten is a daunting task. It will require a much more successful effort on the part of parents and society than we have yet been able to mount. This certainly will entail a plan to improve the health of the pregnant woman and the health of children from conception until age six. We simply have to recognize and act on our understanding of the lifelong links between health and educability of the child.

Let me conclude with a quotation from Gilbert W. Kliman and Albert Rosenfeld's book entitled Responsible Parenthood. In the preface they wrote, "Thus the book became

emphatically addressed not only to parents and would-be parents, but also to nonparents. It makes a real difference to you whether my child turns out to be, say, a dedicated teacher or a narcotics peddler. If my child is retarded or delinquent, you - without having any vote in the matter - help foot the bill or could be one of his or her victims. All children are everyone's children, or should be; and all adults, in addition to being the specific rearers of their own biological offspring (or those they choose to adopt), are in a real sense surrogate parents for all children."